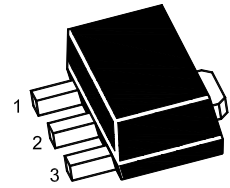


# MPSA44U

## NPN Silicon Epitaxial Planar Transistor

for high voltage switching and amplifier applications.



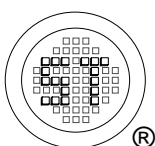
1.Base 2.Collector 3.Emitter  
SOT-89 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	500	V
Collector Emitter Voltage	$V_{CEO}$	400	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	300	mA
Total Power Dissipation	$P_{tot}$	625	mW
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_S$	- 55 to + 150	$^\circ\text{C}$

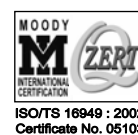
### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $I_C = 1\text{ mA}$ , $V_{CE} = 10\text{ V}$ at $I_C = 10\text{ mA}$ , $V_{CE} = 10\text{ V}$ at $I_C = 30\text{ mA}$ , $V_{CE} = 10\text{ V}$	$h_{FE}$ $h_{FE}$ $h_{FE}$	25 40 40	- - -	- - -
Collector Cutoff Current at $V_{CB} = 400\text{ V}$	$I_{CBO}$	-	0.1	$\mu\text{A}$
Collector Cutoff Current at $V_{CE} = 400\text{ V}$	$I_{CES}$	-	0.5	$\mu\text{A}$
Emitter Cutoff Current at $V_{EB} = 4\text{ V}$	$I_{EBO}$	-	0.1	$\mu\text{A}$
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	500	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	400	-	V
Emitter Base Breakdown Voltage at $I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	V
Collector Emitter Saturation Voltage at $I_C = 1\text{ mA}$ , $I_B = 0.1\text{ mA}$ at $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$ at $I_C = 50\text{ mA}$ , $I_B = 5\text{ mA}$	$V_{CE(sat)}$ $V_{CE(sat)}$ $V_{CE(sat)}$	- - -	0.4 0.5 0.75	V V V
Base Emitter Saturation Voltage at $I_C = 10\text{ mA}$ , $I_B = 1\text{ mA}$	$V_{BE(sat)}$	-	0.75	V
Collector Output Capacitance at $V_{CB} = 20\text{ V}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	7	pF



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Dated : 03/11/2007

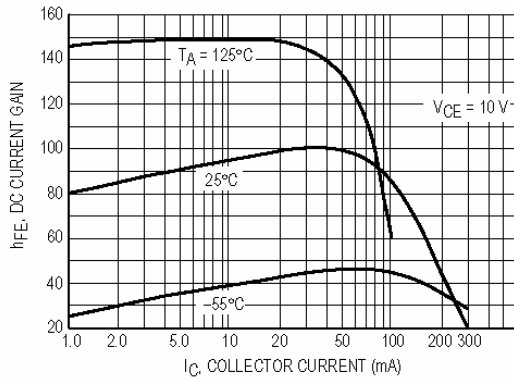


Figure 1. DC Current Gain

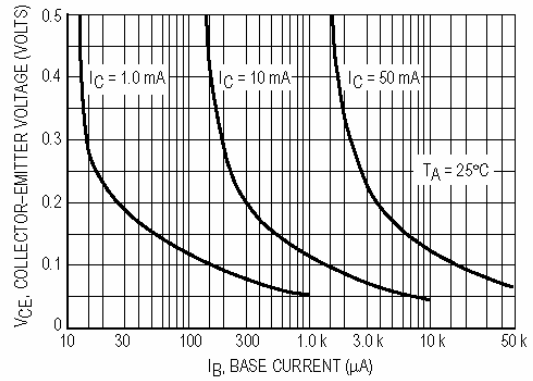


Figure 2. Collector Saturation Region

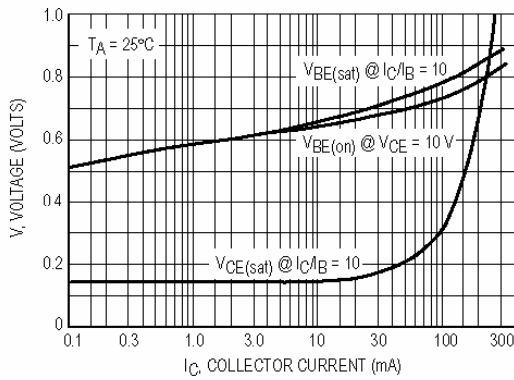


Figure 3. "On" Voltages

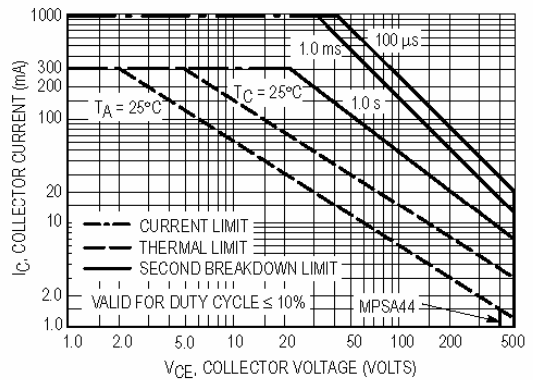


Figure 4. Active Region — Safe Operating Area

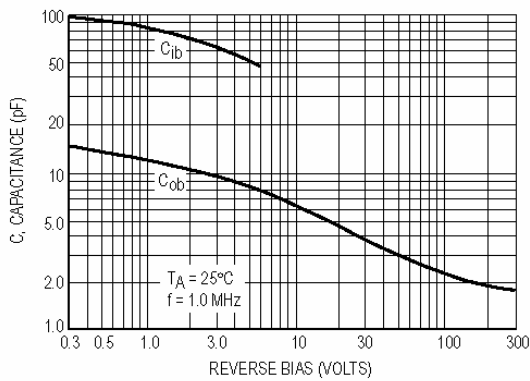


Figure 5. Capacitance

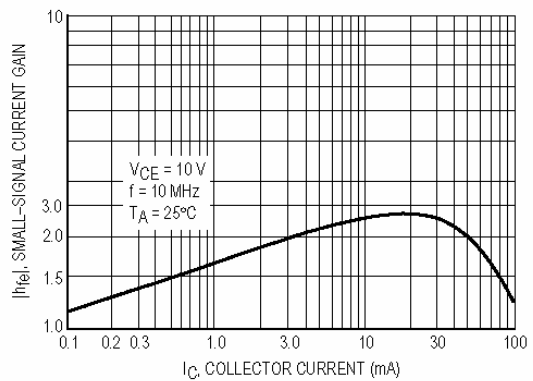
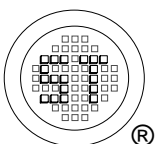
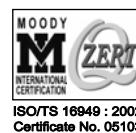


Figure 6. High Frequency Current Gain



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